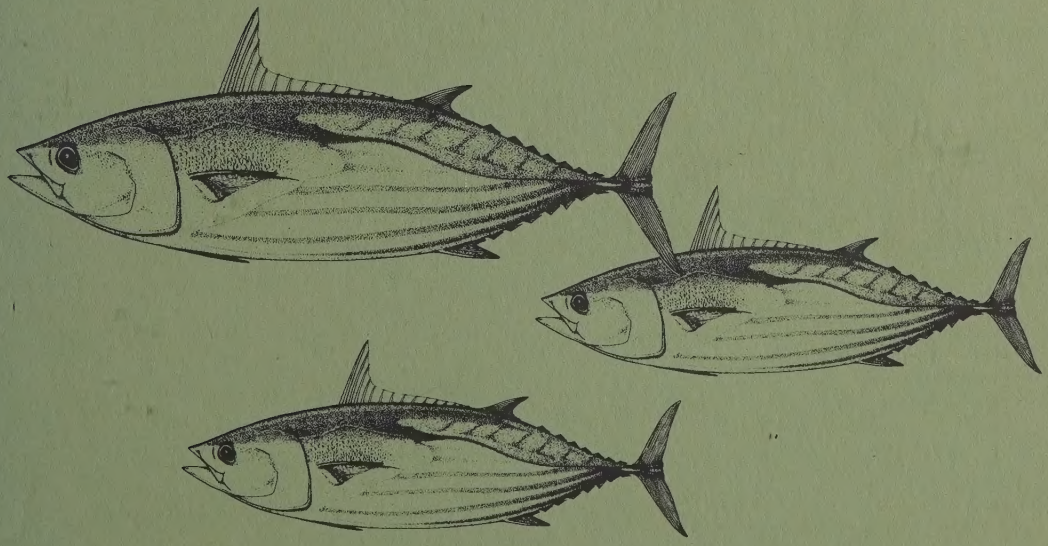
OCTOBER 1975
No. 10

FISHING INFORMATION

Southwest Fisheries Center-La Jolla, California



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SOUTHWEST FISHERIES CENTER
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OCTOBER 1975 , No. 10

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PREFACE

This publication, Fishing Information, appears monthly and contains 1) fishery advisory information, 2) a narrative description of pertinent surface temperature conditions, 3) charts of winds and pressures for the eastern North Pacific, 4) charts of sea surface temperature for the North Pacific and eastern tropical Pacific, and 5) charts of subsurface temperature structure in the eastern North Pacific.

A supplement to Fishing Information appears at 15-day intervals throughout the year. This is a chart of sea surface temperature (contoured at 2°F (1°C) intervals) from Baja California to Vancouver Island out to about 135°W. Special bulletins are published in conjunction with the 15-day sea surface temperature charts which include short-term projections of albacore distribution and locations of productive fishing areas, information on oceanographic and atmospheric conditions, and other information as is appropriate during the albacore fishing season.

The Secretary of Commerce has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication approved by the Office of Management and Budget, August 20, 1973; this approval expires June 1976.

Submitted for publication - November 21, 1975

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ENVIRONMENTAL CHARTS ANALYZED BY:

F. Miller (Figures 8 and 9)
J. Renner (Figures 1, 2, 3, 4, 5, 6, 7, 10, 11 and 15-day Supplement)

TECHNICAL EDITOR:
R. Allen
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L. Collins at Kains Island Lightstation; I.G. McNeil at Amphitrite Point Light
Scripps Institution of Oceanography, La Jolla, California
Fishing Vessels, *Aquarius, Bold Contender, Cabrillo, Captain Joe Medina, Carol S., Cheryl Marie, Christina C., Conquest, Eastern Pacific, Elsinore, Evelyn Da Rosa, Frances Ann, Gina Ann, Jo Linda, Kathleen, Lucky Strike, Marco Polo, Maria C.J., Marietta, Mary Barbara, Pan Pacific, Polaris, Queen Mary, Raefello, San Juan, Santa Rosa, Saratoga, Sea Quest, Sea Treasure, Trinidad, Venturous, Westport, Willa G.*

Expendable bathythermograph and salinity observations are made by the mates and engineers of the *Californian* and *Hawaiian Queen* of Matson Navigation Co. The data are processed under supervision of D.R. McLain at the NMFS Pacific Environmental Group, Monterey, using computer facilities of the Fleet Numerical Weather Center. The project is partially supported by the National Science Foundation and the Office of Naval Research under Government NAonr-9-74.

Sea Surface Temperature and Environmental Conditions

N. CLARK AND F. MILLER

Eastern North Pacific

Although seasonal cooling occurred over most of the Eastern North Pacific during October 1975, it was at a below-normal rate. The largest decreases in sea surface temperature were in an area between 40°N and the Aleutian Islands where they dropped 3 to 5°F (1.7 to 2.8°C) from values in September.

The sea surface temperature anomaly pattern for October is similar to that for September with a large area of 1 to 3°F (0.6 to 1.7°C) above-normal temperatures in the central eastern North Pacific; 1 to 3°F (0.6 to 1.7°C) below-normal temperatures occurred in the Gulf of Alaska, along the western coast of North America, and over a large area extending westward from Baja California to the Hawaiian Islands. The greatest change in the anomaly pattern occurred in a region located between 30°N and 45°N and 160°W and 180°W where temperatures that were 1 to 3°F (0.6 to 1.7°C) below normal rose to 1 to 3°F (0.6 to 1.7°C) above-normal values due to increased solar insolation (associated with below-normal cloud cover) and decreased sensible and latent heat exchange associated with below-normal wind speeds over the area.

Sea level pressures were above normal over the eastern North Pacific south of 35°N and below normal between 35°N and the Aleutian Islands and over the eastern Gulf of Alaska. The resultant pressure gradients caused greater-than-normal southerly winds west of the high pressure cell centered near 35°N and 155°W which contributed to reducing seasonal cooling. East of the high pressure cell, greater-than-normal north to northwesterly winds associated with storm systems moving over the eastern Gulf of Alaska increased heat exchange between ocean and atmosphere and erosion of the northeast corner of the relatively warm water region in the central eastern North Pacific.

Western North Pacific

The most dramatic change in the sea surface temperature anomaly pattern occurred in a region bounded by 35°N to 45°N and 155°E to 170°E where temperatures that were 3 to 5°F (1.7 to 2.8°C) above normal in September decreased to near normal or 1 to 2°F (0.6 to 1.1°C) below normal values in October. Other changes in the anomaly pattern occurred east of Hokkaido where above-normal temperatures decreased to 1 to 2°F (0.6 to 1.1°C) below-normal values and in a region bounded by 20°N to 35°N and 135°E to 150°E where below-normal temperatures increased to slightly above-normal values.

The area of relatively cool water in the central portion of the western North Pacific remained about the same in size and intensity, as did the region of above-normal temperatures east of the Kuril Islands and the Kamchatka Peninsula.

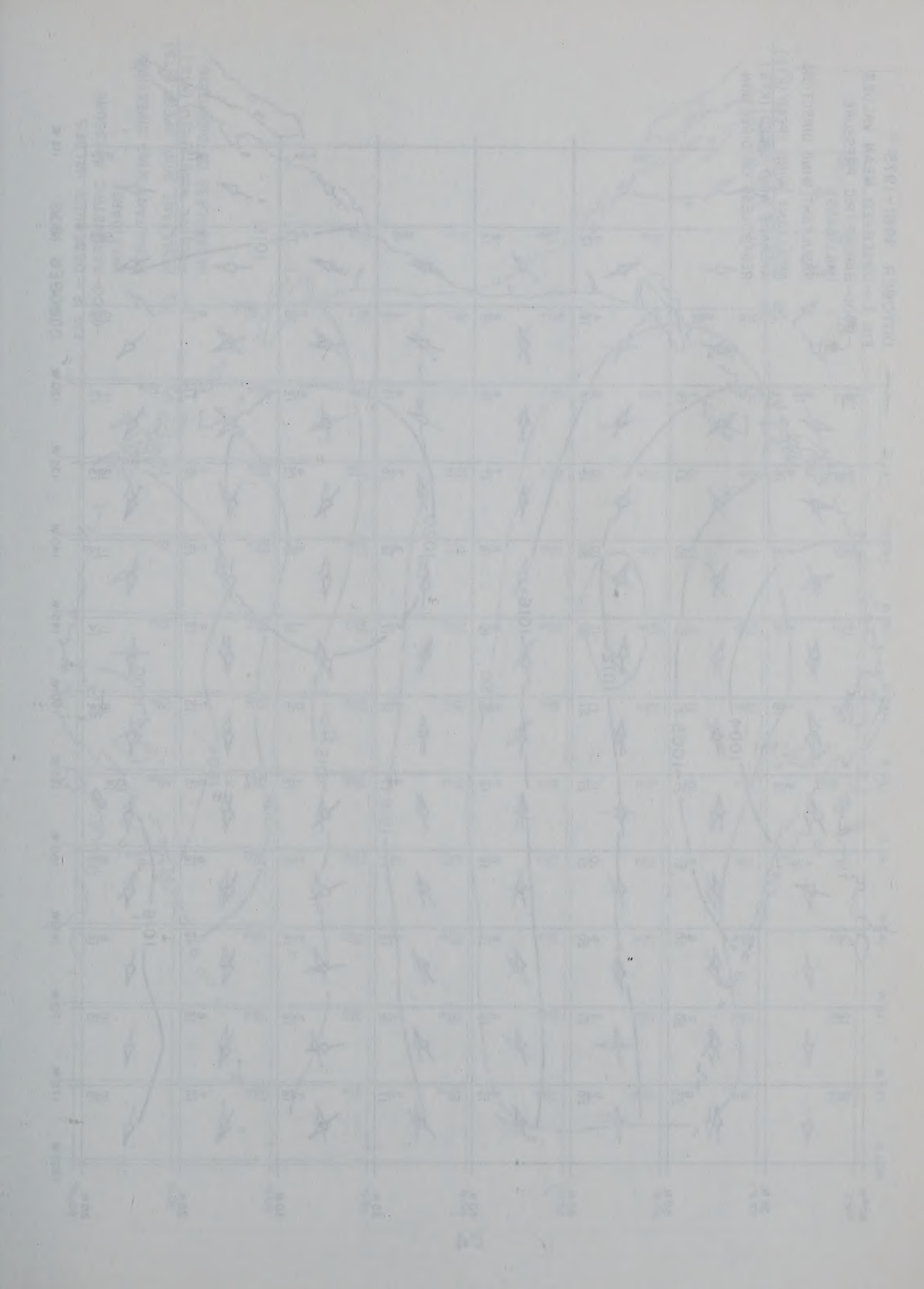
Eastern Tropical Pacific

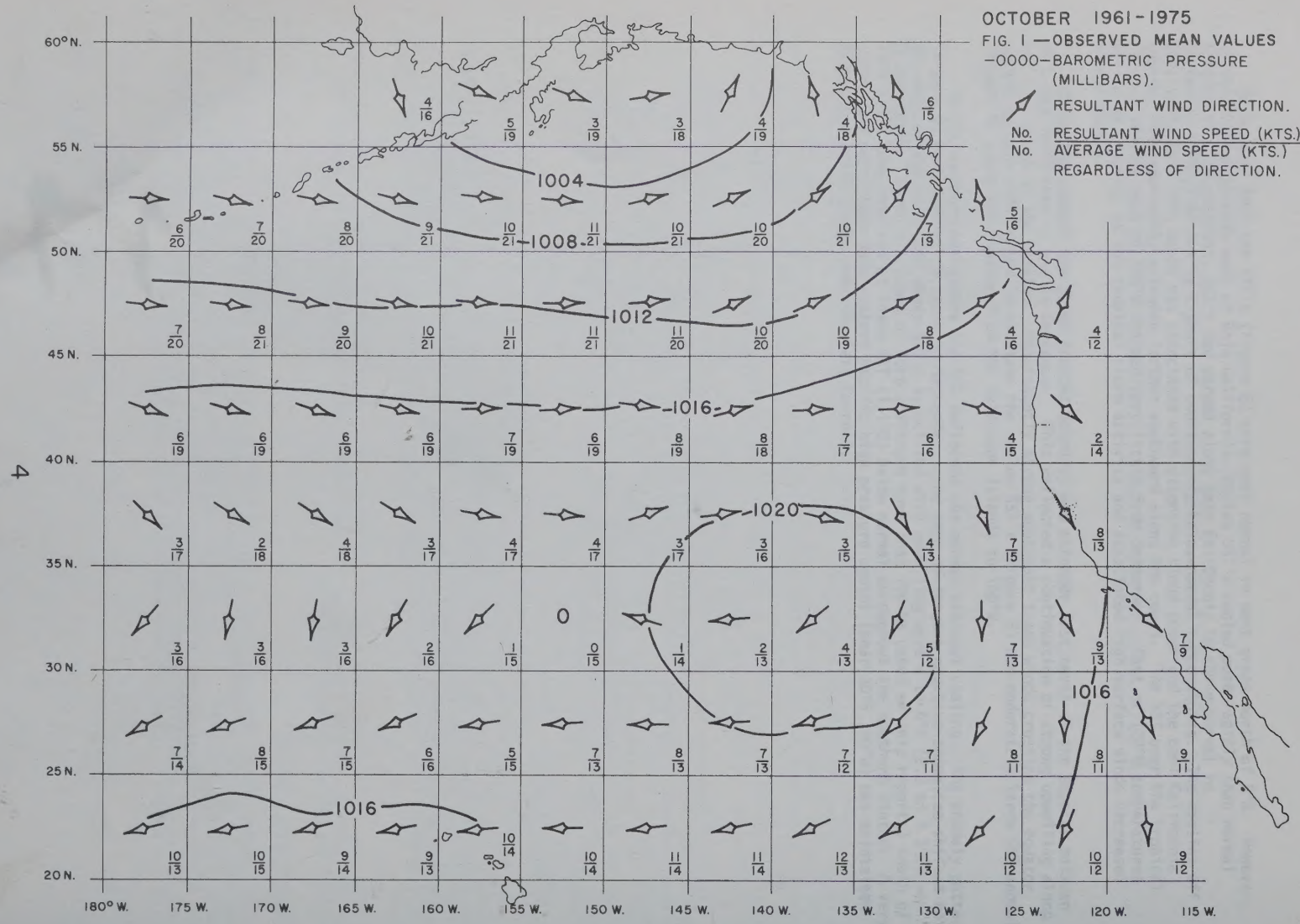
In October sea surface temperatures (SST's) normally begin to decrease slightly in the northern hemisphere. Along the equator and in the southern hemisphere to 20°S there is less than 1°F (0.6°C) change in SST from September. In the Peru Current and along the equator to 150°W upwelling and ocean mixing bring about the annual SST minimum in October. The equatorial ocean front remains strong with tight north-south surface temperature gradients extending westward from Ecuador (near 5°S) to the Galápagos Islands and westward north of the equator to 120°W.

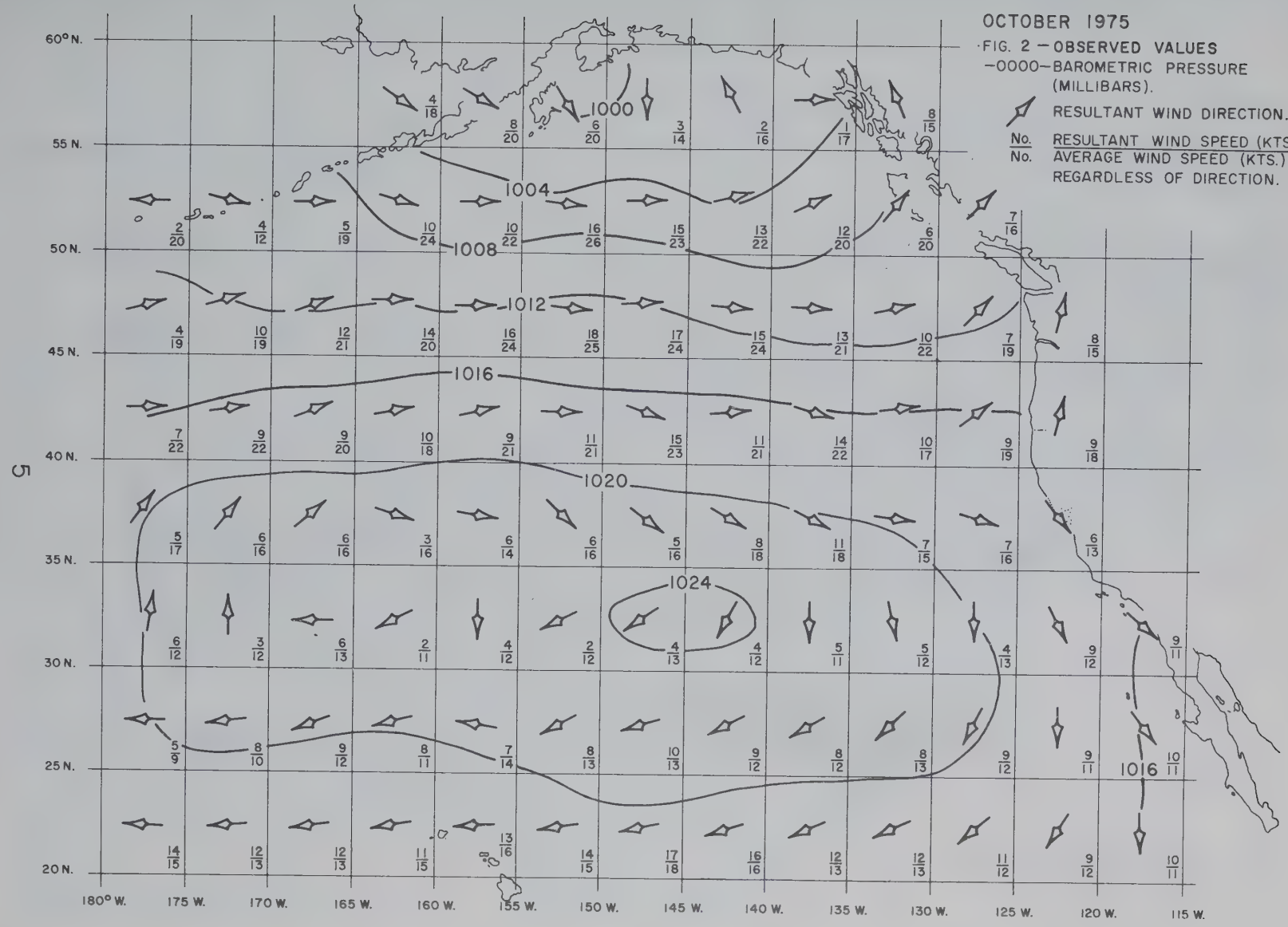
In October 1975 the SST's (Figure 8) were near normal in most areas north of 5°N. However, in the fishing grounds west of Baja California, Mexico SST's cooled more rapidly than normal (Figure 9). In contrast, SST's had warmed along Baja California to above normal in September 1975 after nearly 2 years of continuously below-normal temperatures. The cooling off Baja California this month was associated with extensive cloud cover and the cool California Current that apparently extended farther southward along the coast. The SST over the tropical fishing grounds west of 120°W changed very little from September. East of 120°W temperatures warmed up slightly as the tropical storm activity and associated high surface winds decreased significantly.

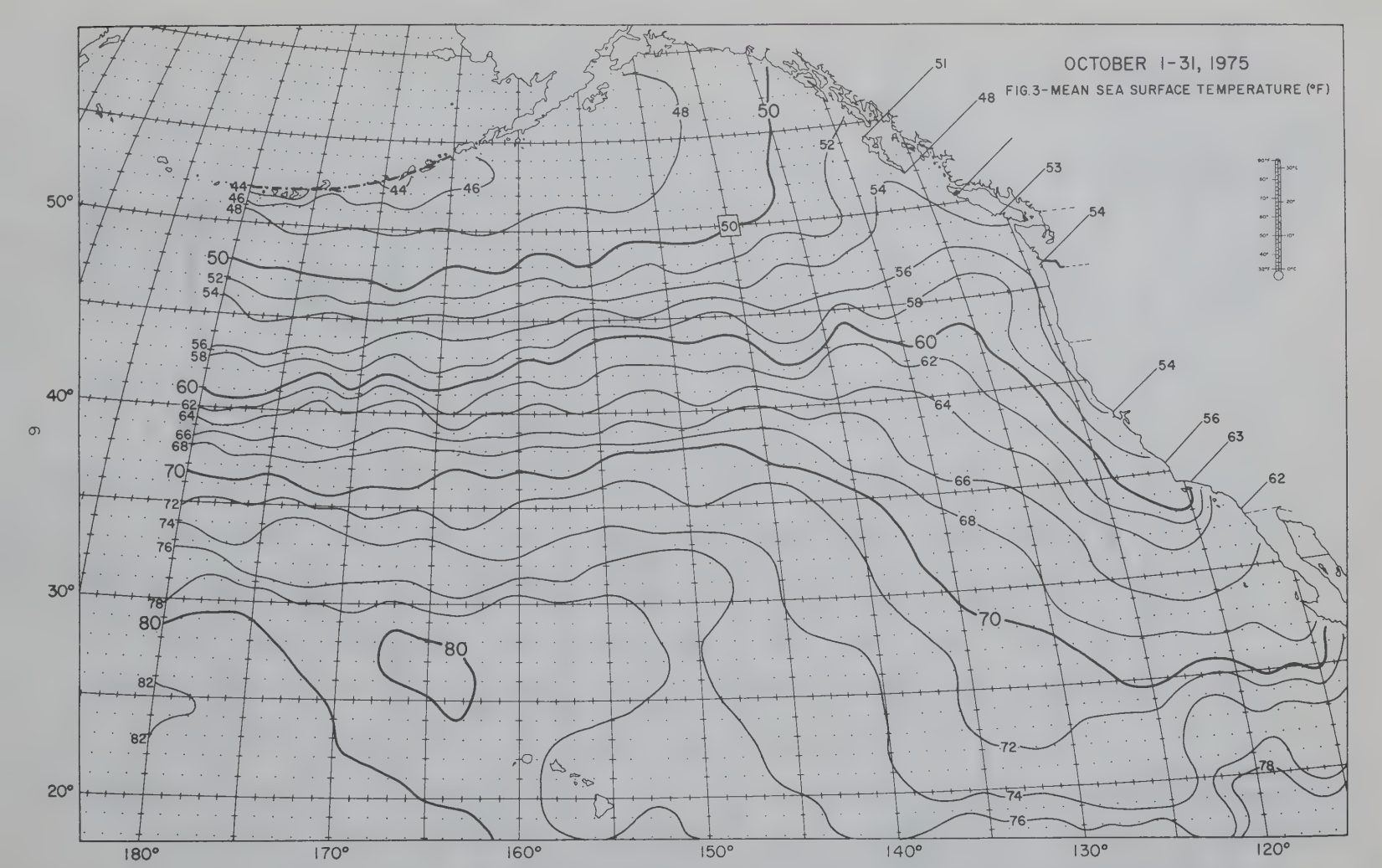
Along the equator the ocean frontal boundary was stronger just north of the equator between 90°W and 120°W than it was in September. This reflected a continuation of strong upwelling along and just south of the equator. Persistently strong southeast trade winds crossing the equator during October 1975 helped to maintain the cooler SST's (Figure 8) and moderately large SST anomalies (Figure 9) along the equator from the Galápagos Islands to 160°W.

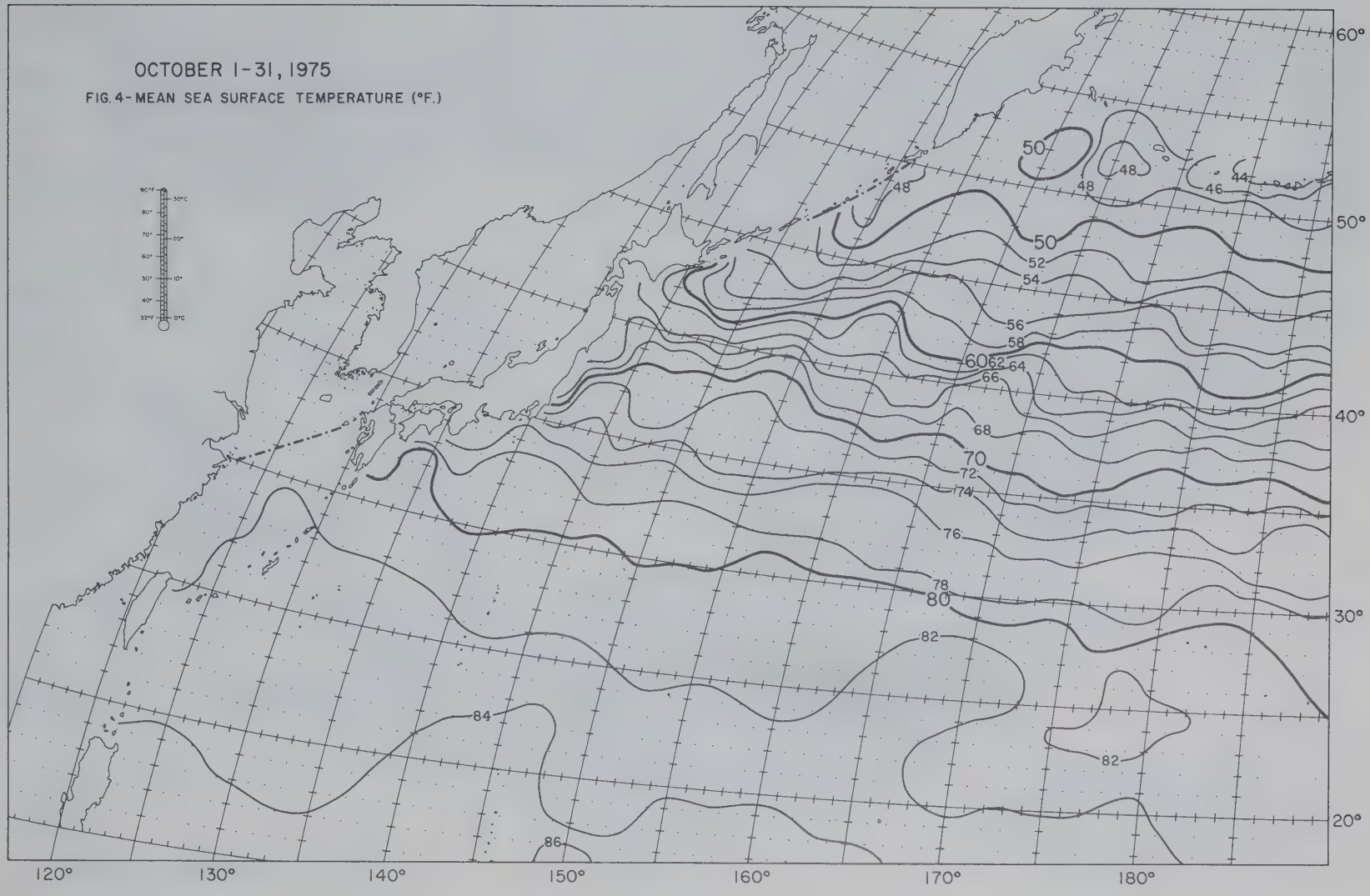
In the southern hemisphere the SST reflected the normal seasonal cooling. The anomaly patterns (Figure 9) were similar to those in September. The area of largest negative anomalies shifted to the west of the Galápagos where SST's associated with upwelling were 4 to 6°F (2.2 to 3.3°C) below normal. Along the coast of Peru (offshore more than 100 km based on ship reports) south of 15°S SST's have remained at least 2°F (1.1°C) below normal throughout the southern winter. A very strong and persistent southeastern Pacific high pressure center (near 30°S, 90°W) has maintained strong southeast trades over the Peru Current.

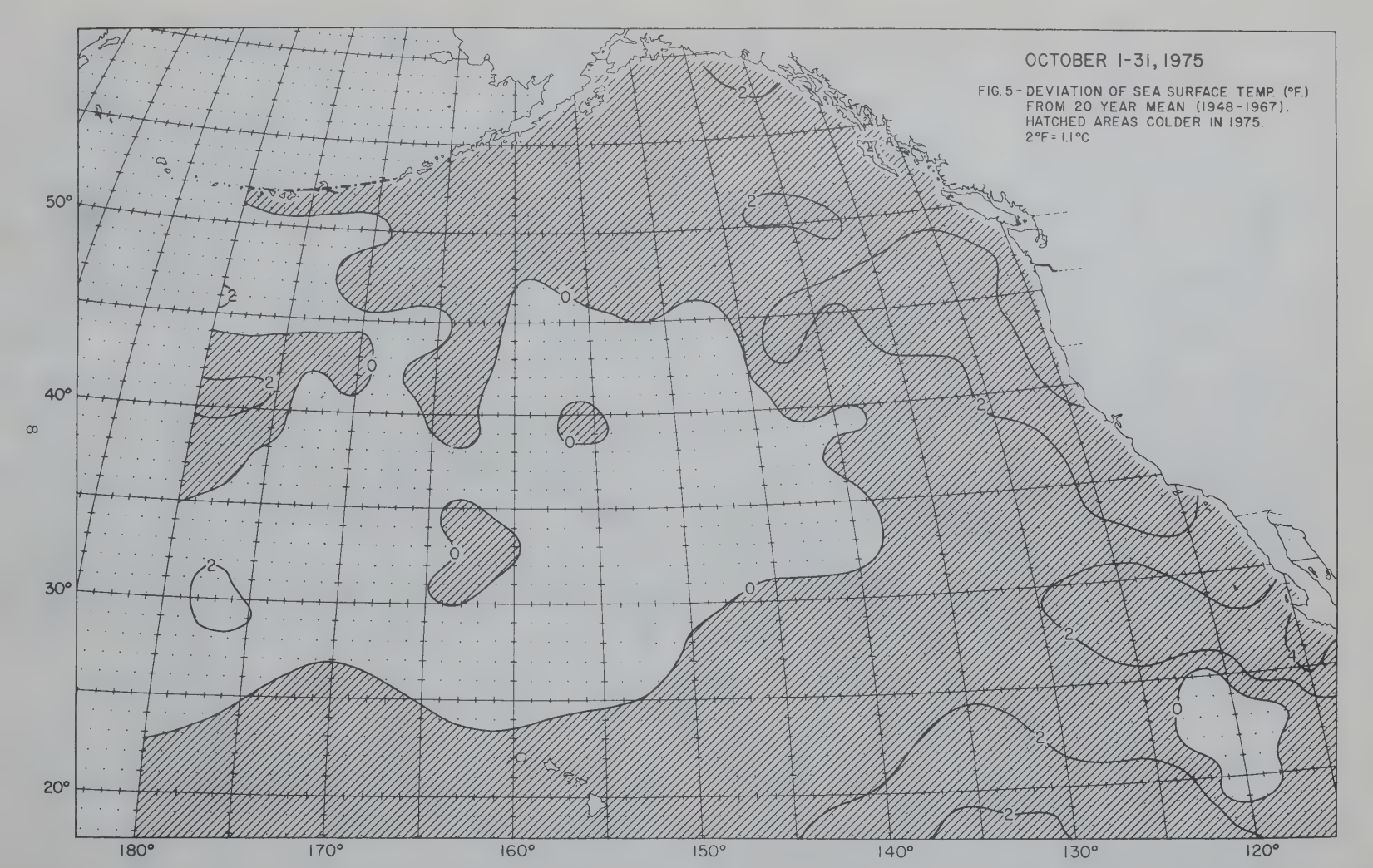


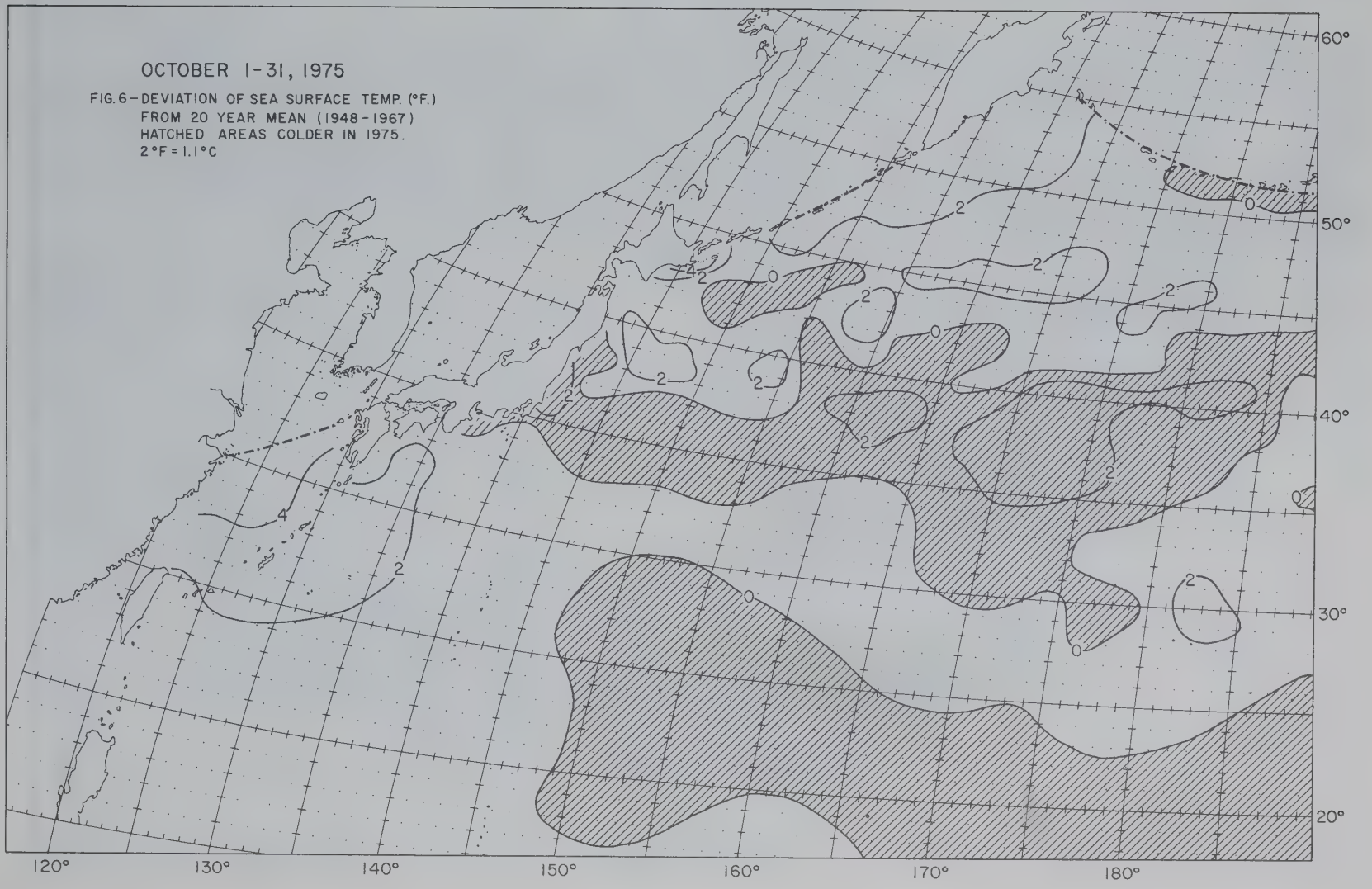

OCTOBER 1961-1975
FIG. 1 —OBSERVED MEAN VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.)
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1004
1008
1012
1016
1020
0
1016
1016
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.

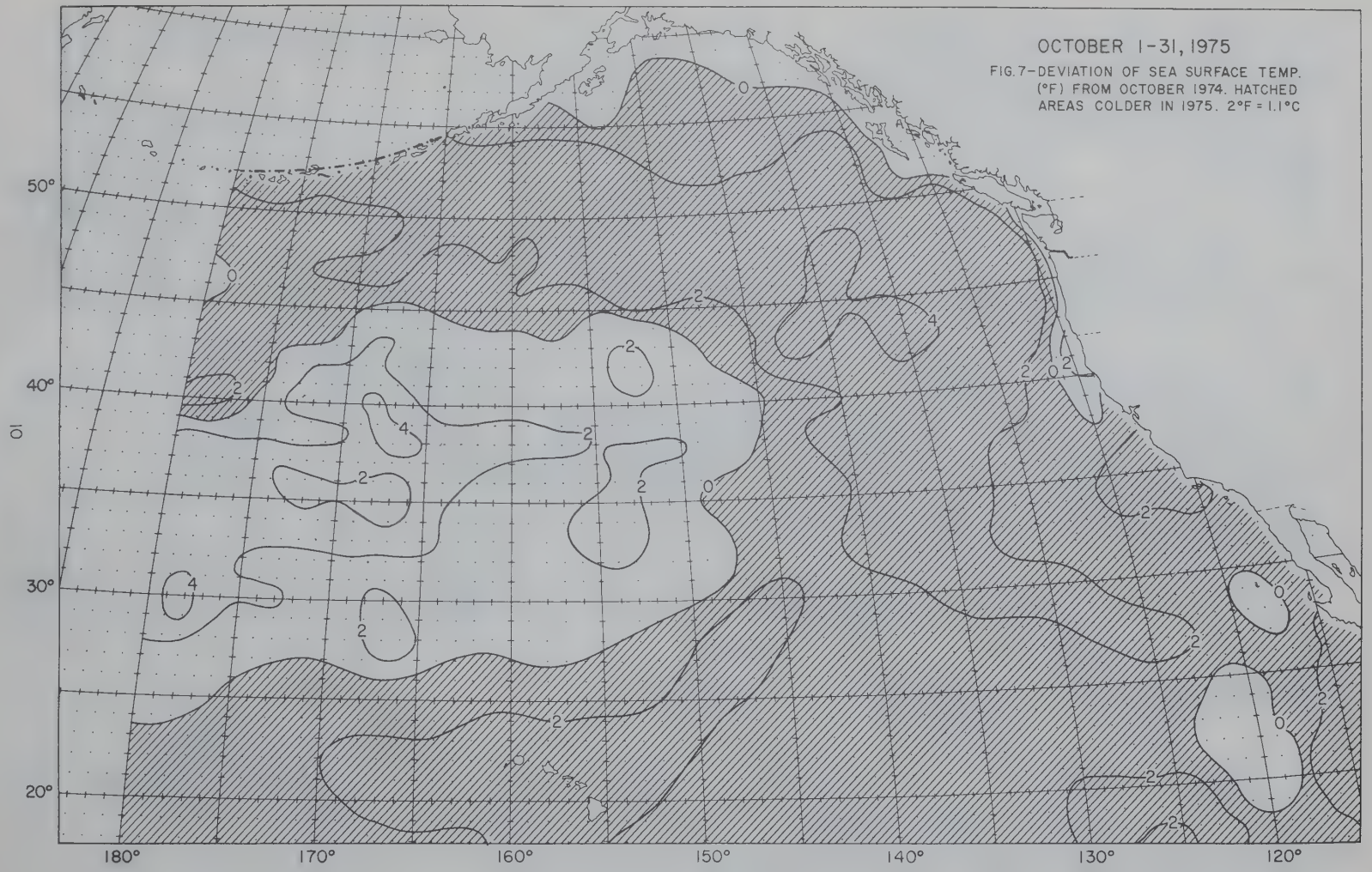

OCTOBER 1975
FIG. 2 — OBSERVED VALUES
—0000— BAROMETRIC PRESSURE (MILLIBARS).
RESULTANT WIND DIRECTION.
No. RESULTANT WIND SPEED (KTS.)
No. AVERAGE WIND SPEED (KTS.) REGARDLESS OF DIRECTION.
1000
1004
1008
1012
1016
1020
1024
1016
60° N.
55 N.
50 N.
45 N.
40 N.
35 N.
30 N.
25 N.
20 N.
180° W.
175 W.
170 W.
165 W.
160 W.
155 W.
150 W.
145 W.
140 W.
135 W.
130 W.
125 W.
120 W.
115 W.

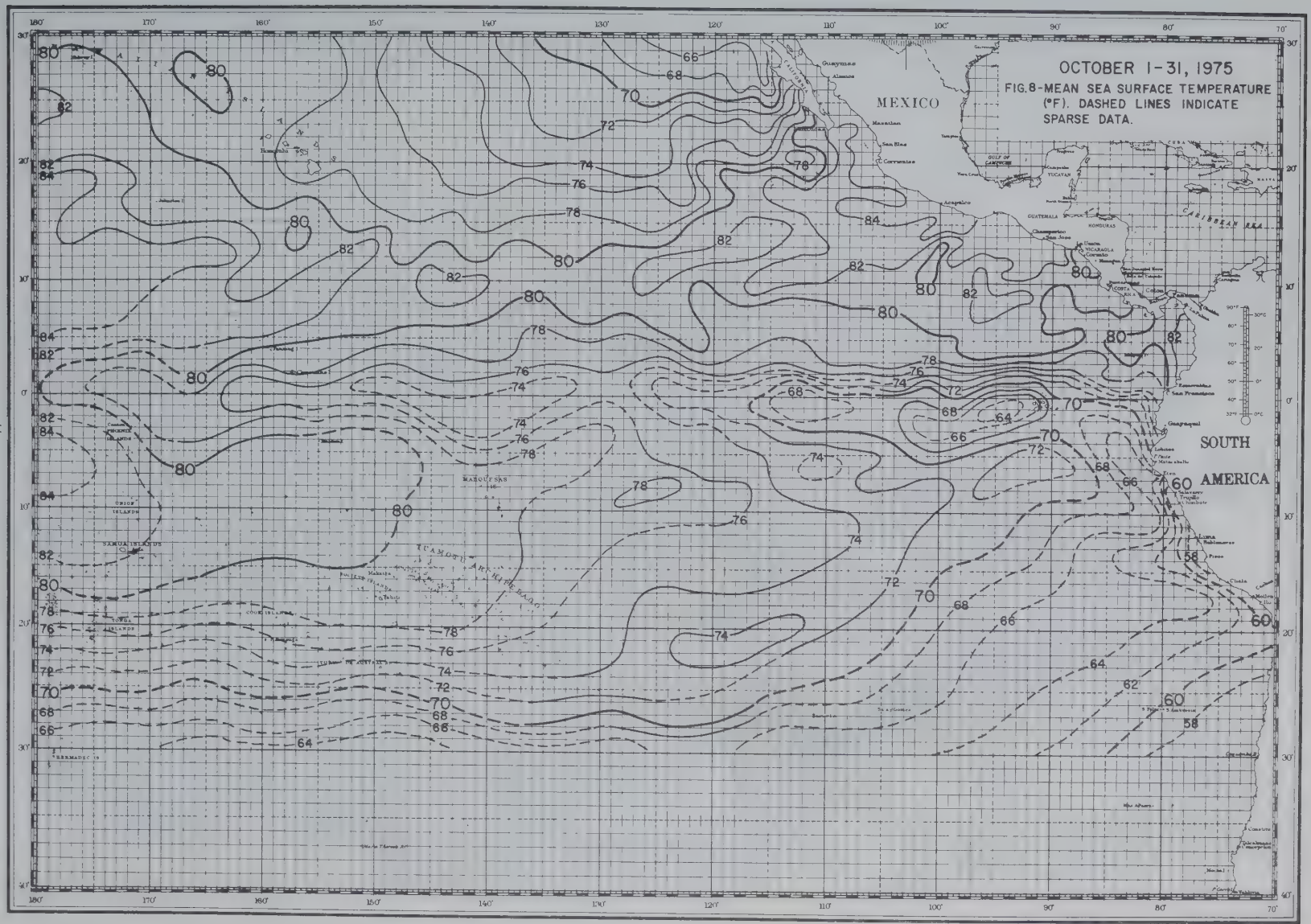

OCTOBER 1-31, 1975
FIG.3-MEAN SEA SURFACE TEMPERATURE (°F)
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°


OCTOBER 1-31, 1975
FIG. 4 - MEAN SEA SURFACE TEMPERATURE (°F.)
90°F 30°C
80° 20°
70° 10°
60° 0°
50°
40°
32°F 0°C
48
50
48
48
44
46
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
82
86
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°


OCTOBER 1-31, 1975
FIG. 5 - DEVIATION OF SEA SURFACE TEMP. (°F.) FROM 20 YEAR MEAN (1948-1967). HATCHED AREAS COLDER IN 1975.
2°F = 1.1°C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
2
0
4


OCTOBER 1-31, 1975
FIG. 6 - DEVIATION OF SEA SURFACE TEMP. (°F.)
FROM 20 YEAR MEAN (1948-1967)
HATCHED AREAS COLDER IN 1975.
2°F = 1.1°C
60°
50°
40°
30°
20°
120°
130°
140°
150°
160°
170°
180°


OCTOBER 1-31, 1975
FIG. 7-DEVIATION OF SEA SURFACE TEMP. (°F) FROM OCTOBER 1974. HATCHED AREAS COLDER IN 1975. 2°F = 1.1°C
50°
40°
30°
20°
180°
170°
160°
150°
140°
130°
120°
0
2
4
10


OCTOBER 1-31, 1975
FIG.8-MEAN SEA SURFACE TEMPERATURE (°F). DASHED LINES INDICATE SPARSE DATA.
MEXICO
SOUTH AMERICA
CARIBBEAN SEA
GUATEMALA
HONDURAS
COSTA RICA
PANAMA
YUCATAN
GULF OF CAMPECHE
Acapulco
Manzanillo
San Blas
Corrientes
Guaymas
Alamos
Honolulu
Johnston I.
Palmyra I.
Kingman Reef
Fanning I.
Christmas I.
Canton I.
Phoenix Is.
Gilbert Is.
Ellice Is.
Union Islands
Samoa Islands
Tuamotu Archipelago
Marquesas
Society Is.
Cook Islands
Tubuai Is.
Austral Is.
Easter I.
Bermadic Is.
Galapagos Is.
Guayaquil
Salaverry
Callao
Pisco
Lima
Chala
Mollendo
Arica
Iquique
Tocopilla
Antofagasta
Coquimbo
Valparaiso
San Antonio
Talcahuano
Corral
Puerto Montt
Chiloe I.
Taitao Pen.
Tierra del Fuego
Magellan Str.
Cape Horn
Juan Fernandez Is.
Mas Afuera
Mas a Tierra
San Ambrosio
San Felix
Rio Negro
Montevideo
Buenos Aires
Bahia Blanca
Comodoro Rivadavia
Puerto Deseado
Puerto San Julian
Rio Gallegos
Falkland Is.
Rio de Janeiro
Cabo Frio
Vitoria
Abrolhos
Recife
Fernando de Noronha
Natal
Fortaleza
Ceara
Maranhao
Belem
Para
Amapa
Cayenne
Paramaribo
Georgetown
Trinidad
Tobago
Barbados
Grenada
St. Vincent
St. Lucia
Martinique
Guadeloupe
Montserrat
Antigua
St. Kitts
Nevis
Virgin Is.
St. Thomas
St. Croix
Puerto Rico
San Juan
Mona Passage
Dominican Republic
Haiti
Jamaica
Cuba
Havana
Matanzas
Cienfuegos
Santiago de Cuba
Guantanamo
Nassau
Bahamas
Florida
Key West
Miami
Tampa
Pensacola
Mobile
New Orleans
Galveston
Corpus Christi
Brownsville
Tampico
Veracruz
Coatzacoalcos
Campeche
Progreso
Belize
Puerto Barrios
Livingston
Champerico
San Jose
La Union
La Libertad
Corinto
Managua
Puntarenas
Golfito
Balboa
Cristobal
Colon
Puerto Limon
Chiriqui Grande
Bocas del Toro
Almirante
Puerto Armuelles
Rio Hato
Aguadulce
Chitre
Las Tablas
Punta Mala
Panama
Taboga I.
Coiba I.
Malpelo I.
Cocos I.
Clipperton I.
Revillagigedo Is.
Socorro I.
Guadalupe I.
Cedros I.
Isla Natividad
Punta Eugenia
Scammon Lagoon
Ojo de Liebre Lagoon
San Quintin
Ensenada
Punta Banda
Todos Santos
Cabo San Lucas
Magdalena Bay
Margarita I.
Mazatlan
Guaymas
Topolobampo
Mazatlan
Manzanillo
Acapulco
Salina Cruz
Puerto Angel
Puerto Madero
Champerico
Acajutla
La Union
La Libertad
Corinto

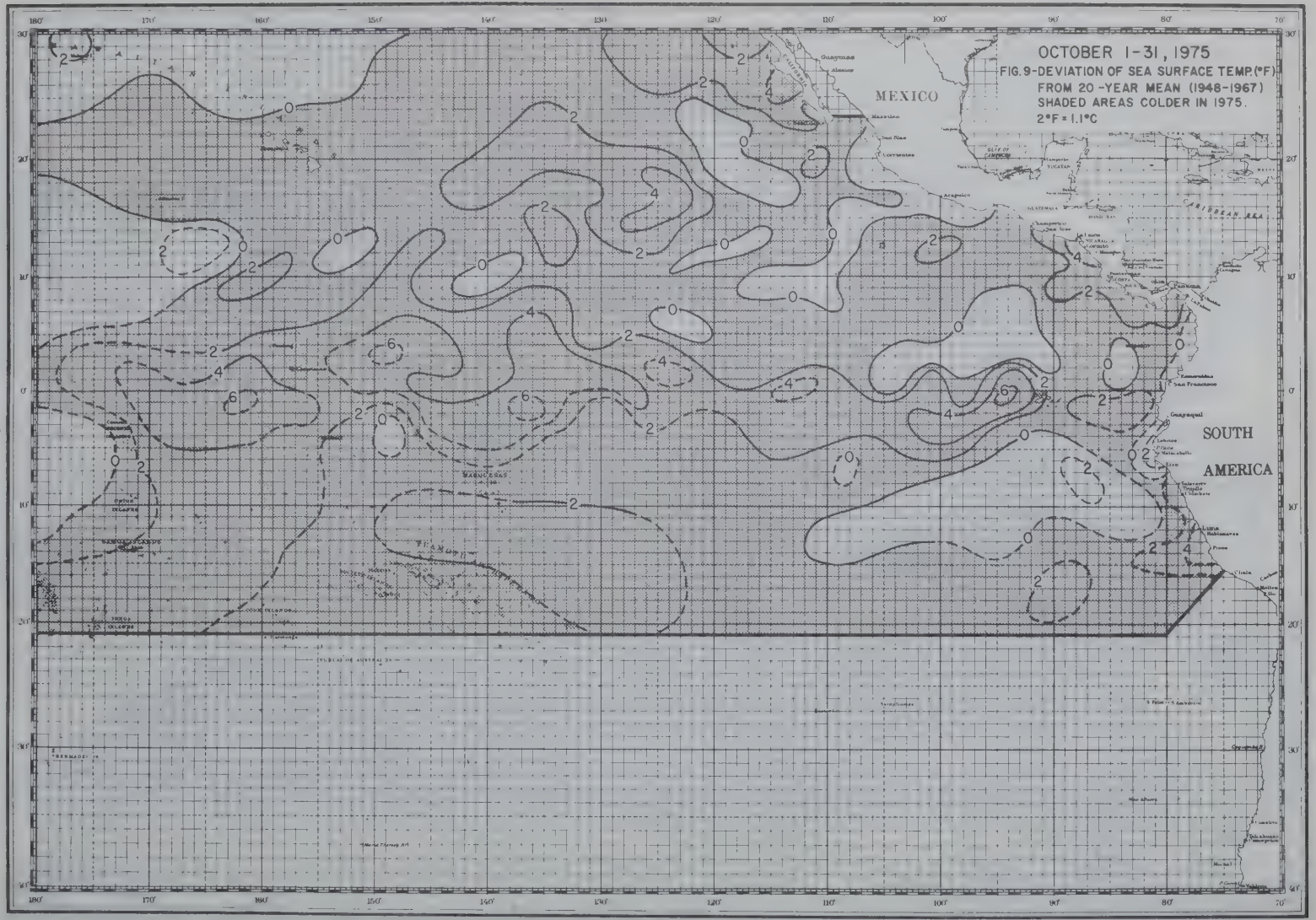
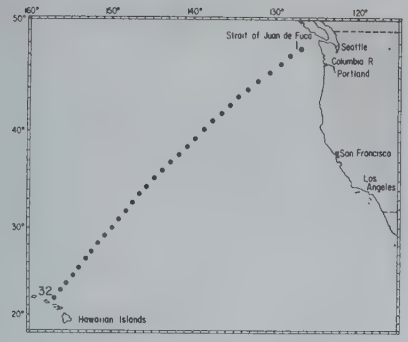
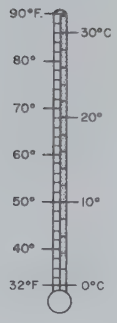

OCTOBER 1-31, 1975
FIG. 9-DEVIATION OF SEA SURFACE TEMP.(°F)
FROM 20-YEAR MEAN (1948-1967)
SHADED AREAS COLDER IN 1975.
2°F = 1.1°C
MEXICO
SOUTH
AMERICA
180°
170°
160°
150°
140°
130°
120°
110°
100°
90°
80°
70°
30°
20°
10°
0°
10°
20°
30°
40°

FIGURE 10





HONOLULU — SEATTLE
(Makapuu Pt. — St. of Juan de Fuca)

SEPT. 30 - OCT 6, 1975

CALIFORNIAN

VOYAGE 263

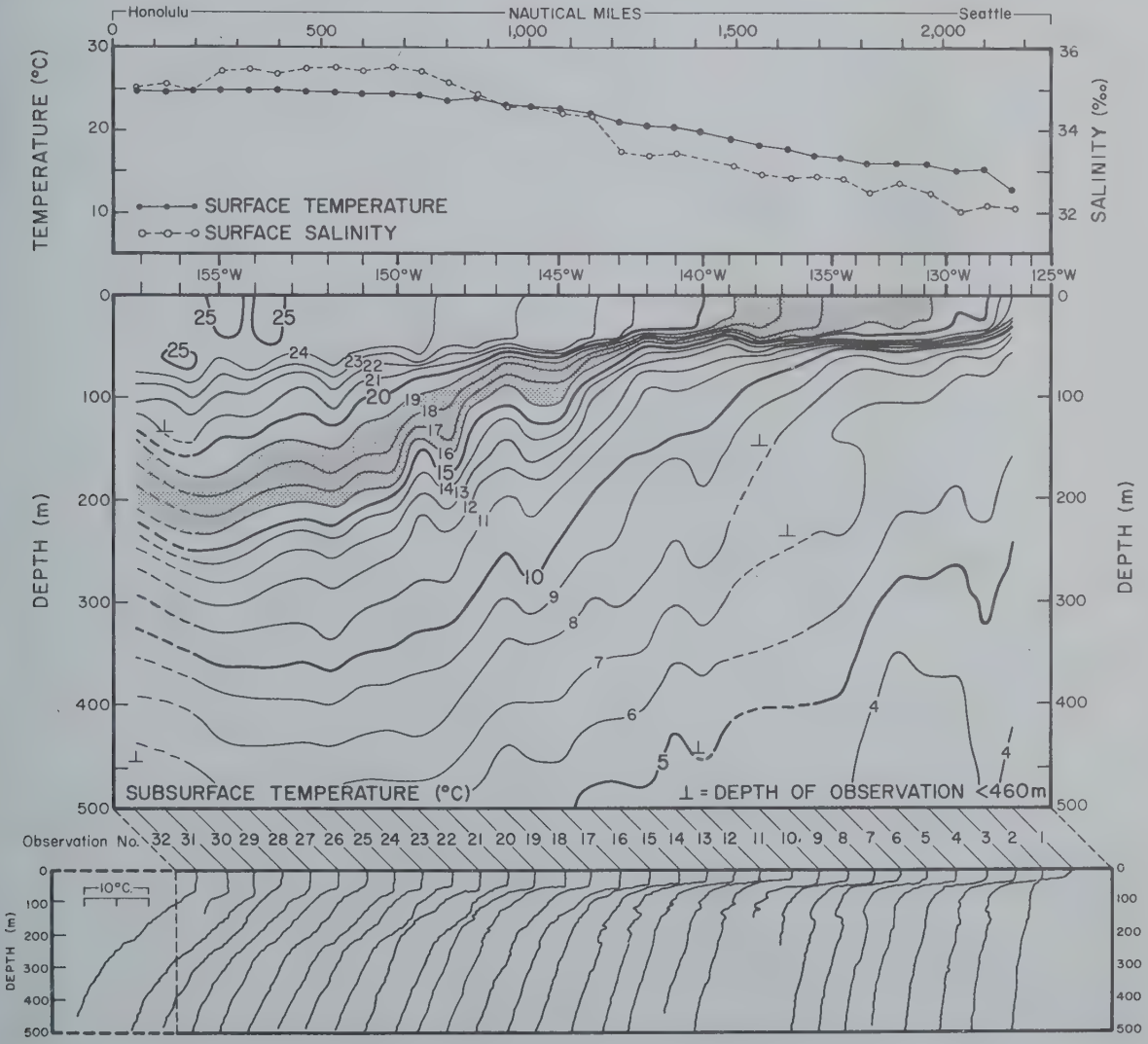
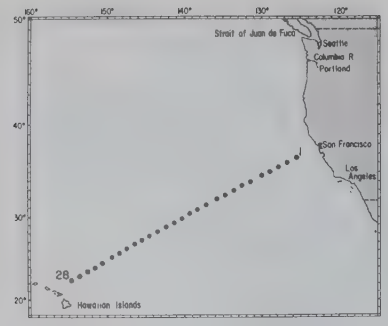
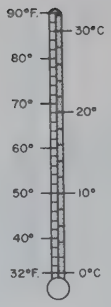


FIGURE 11



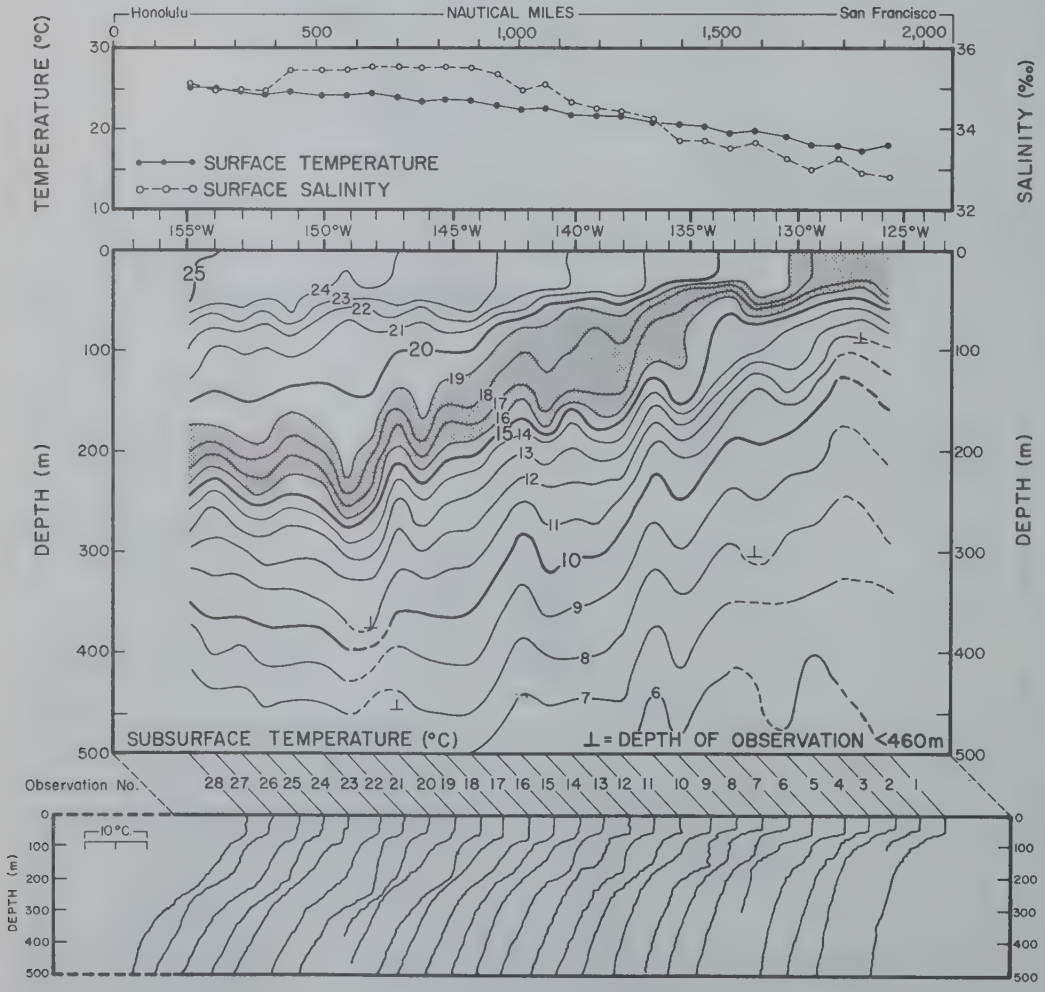


HONOLULU – SAN FRANCISCO

SEPT. 25-30, 1975

HAWAIIAN QUEEN

VOYAGE 166



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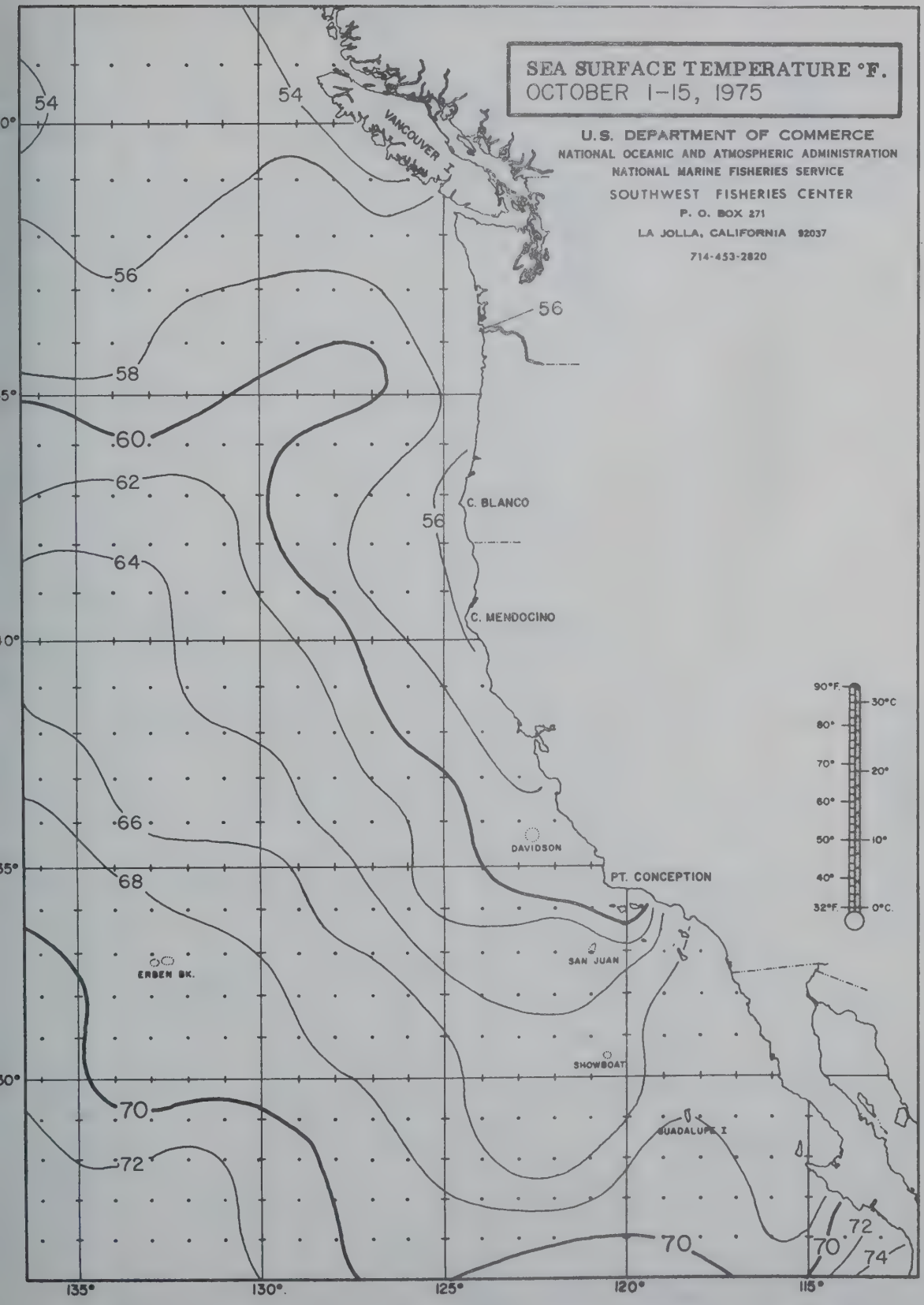

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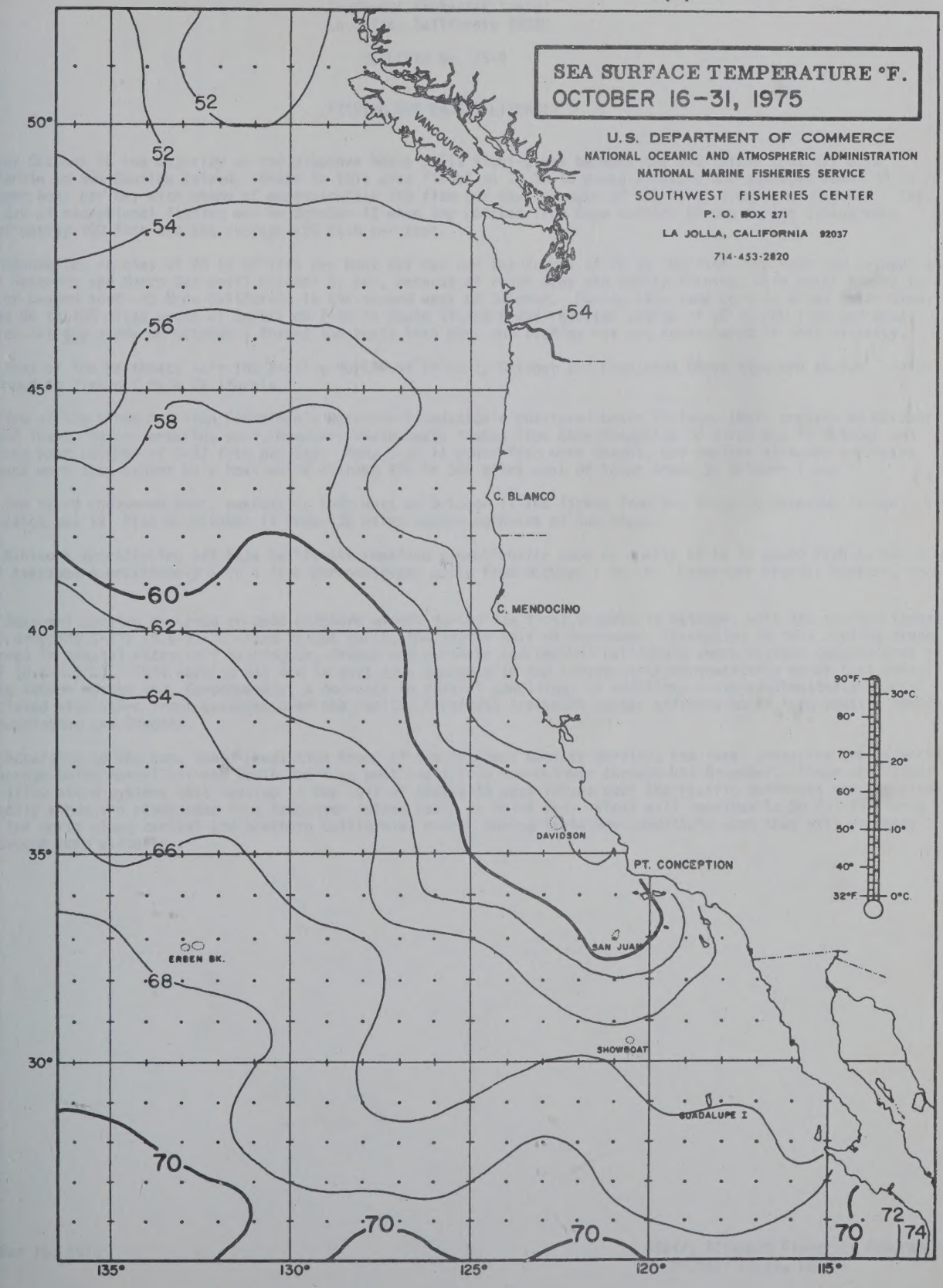

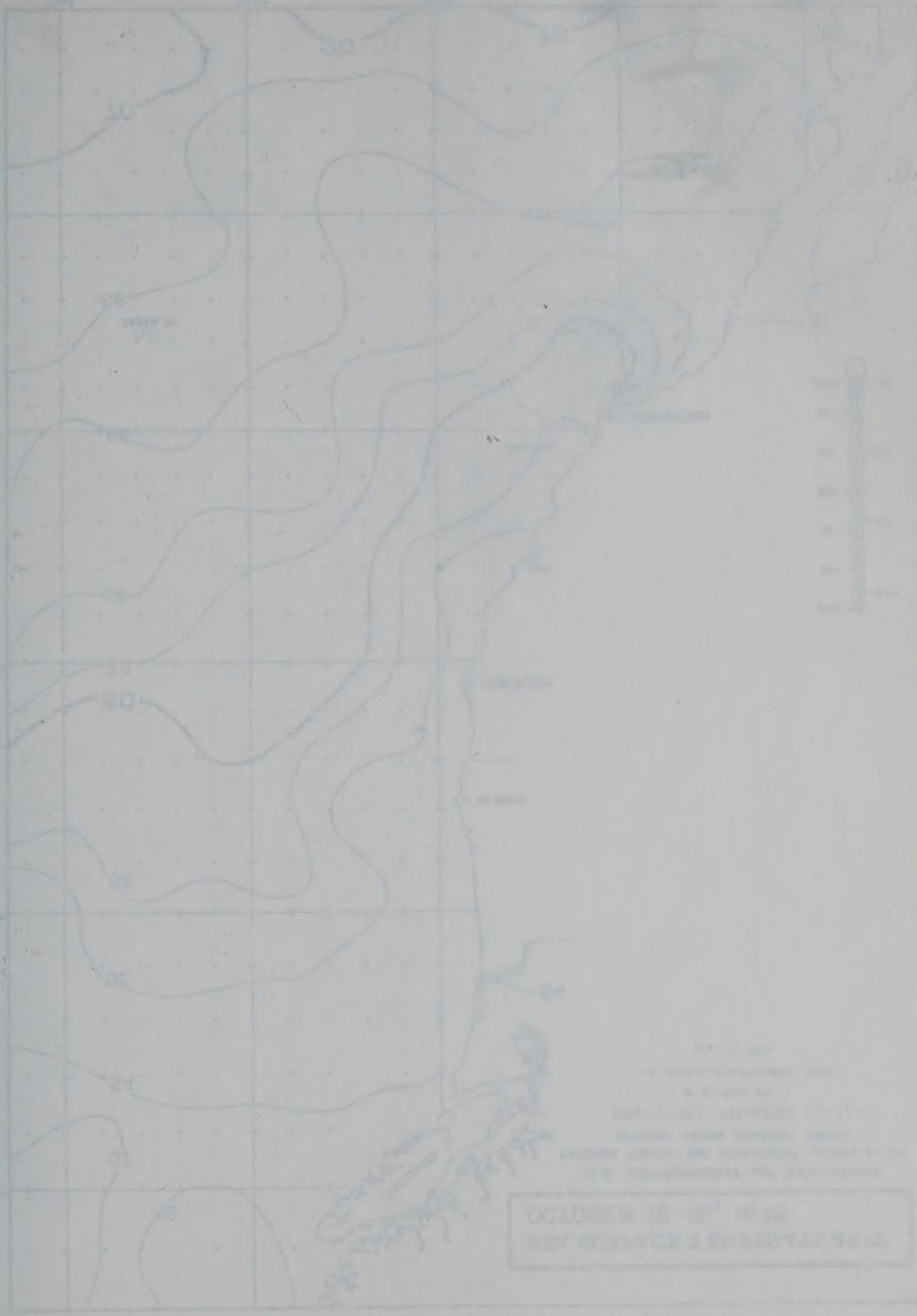

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE
Southwest Fisheries Center
La Jolla, California 92038

BULLETIN No. 75-9

FISHING OFF BAJA CALIFORNIA

By October 15 the majority of the albacore boats still fishing was between the 295 fathom spot off Baja fornia to San Benitos Island. Boats in this area fished on 11 to 13 pound albacore and averaged about 30 to 70 per boat per day with highs of approximately 100 fish per day for much of the first 2 weeks of October. The day of exceptional fishing was on October 12 when top catches from Cape Colnett to San Martin Island were oximately 400 fish and the average 150 fish per boat.

Meanwhile, catches of 20 to 50 fish per boat per day and top scores of 70 to 100 fish were reported between the e Seamount and Morro Bay until October 5; but, because of rough seas and spotty fishing, more boats stayed in or headed south to Baja California in the second week of October. During this same period, a few boats also ed 80 to 100 miles wests of Eureka on 7 to 11 pound albacore and reported scores of 50 to 200 fish per boat; ver, strong winds on October 7 forced the boats into port and fishing has not redeveloped in this vicinity.

Many of the baitboats left the Pacific Northwest in early October and completed their albacore season. Others inued to fish off Baja California.

Two of the three American Fishermen's Research Foundation's chartered boats finished their cruises on October and 10th. Before entering port, however, these boats fished from Cape Mendocino to Morro Bay in October and rted poor catches of 0-33 fish per day. Many 9 to 11 pound fish were caught, but smaller albacore averaging unds were also caught by a boat while fishing 255 to 320 miles west of Point Arena on October 1 and 2.

The third chartered boat, meanwhile, left port on October 11 and fished from San Diego to Geronimo Island. Its catch was 131 fish on October 13 from 135 miles south-southwest of San Diego.

Albacore sportfishing off Baja California remained exceptionally good on mostly 16 to 18 pound fish as San Diego s averaged approximately 1 to 4 fish per passenger daily from October 1 to 14. Passenger counts, however, were .

Seasonal cooling occurred in most offshore waters during the first 2 weeks in October, with sea surface tempera- s dropping 1-2°F (0.6-1.1°C) from values during the latter half of September. Exception to this cooling trend rred in coastal waters off Washington, Oregon and northern and central California where surface temperatures rose °F (0.6-1.1°C). This warming was due in part to a decrease in the strong north-northwesterly winds that prevail ng summer months and, consequently, a decrease in coastal upwelling; in addition, south-southwesterly winds ciated with storm front passages over the Pacific Northwest transport warmer offshore water into coastal regions Washington and Oregon.

According to the Long Range Prediction Group of the National Weather Service, sea level pressures are expected verage below normal off the North American west coast from mid-October through mid-November. These conditions allow storm systems that develop in the Gulf of Alaska to pass inland over the Pacific Northwest causing strong therly winds and rough seas from Vancouver Island south to Point Sur. Winds will continue to be fairly strong n the north along central and southern California, except during Santa Ana conditions when they will decrease become more easterly.

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